

Claims

1. A ferrule for an optical fiber connector comprising:
 - a multilayer ceramic or silicon wafer body having a top, bottom, front and rear sides and opposed sides; and
 - a plurality of optical fiber through openings extending through the body between the top and bottom for holding individual optical fibers.
2. The ferrule of claim 1 wherein the ferrule further comprises alignment pin through openings extending through the body between the top and the bottom.
3. The ferrule of claim 1 wherein the optical fiber through openings are tapered.
4. The ferrule of claim 1 wherein the optical fiber through openings are tapered at the entrance of the opening.
5. The ferrule of claim 1 wherein the optical fiber through openings are wider at the entrance end of the opening.
6. The ferrule of claim 1 wherein the optical fiber through openings are made by laser drilling, photolithography, mechanical punching, precision drilling, laser ablation or etching.
7. The ferrule of claim 6 wherein the optical fiber through openings are made by mechanical punching, laser ablation or etching.
8. A method for making a ferrule for an optical fiber connector comprising the steps of:
 - forming a plurality of greensheets from a ceramic material;
 - stacking the plurality of greensheets together to a desired thickness the stack having a top, bottom, front and rear sides and opposed sides;

laminating the stack;
forming optical fiber through openings in the stack extending through the top and bottom in the desired pattern; and
sintering the laminated stack to form an optical connector ferrule.

9. The method of claim 8 wherein the optical fiber through openings are formed in each greensheet before the stack is laminated.
10. The method of claim 8 wherein the optical fiber through openings are tapered.
11. The method of claim 8 wherein the optical fiber through openings are tapered at the entrance of the opening.
12. The method of claim 8 wherein the optical fiber through openings are wider at the entrance of the opening.
13. The method of claim 8 wherein the optical fiber through openings are made by laser drilling, photolithography, mechanical punching, precision drilling, laser ablation or etching.
14. The method of claim 13 wherein the optical fiber through openings are made by mechanical punching, laser ablation or etching.
15. The method of claim 8 further comprising forming alignment pin through openings extending through the body between the top and the bottom.
16. A method for making a ferrule for an optical fiber comprising the steps of:
forming a plurality of ferrule layers from a ceramic material greensheet or silicon wafer;

stacking the ferrule layers to a desired thickness, the stack having a top, bottom, front and rear sides and opposed sides;
securing the layers to hold the stack together; and
forming optical fiber through openings in the stack extending through the top and bottom in the desired pattern forming the ferrule.

17. The method of claim 16 wherein the through openings are formed in each layer before stacking.

18. The method of claim 16 wherein the ceramic greensheets are sintered after forming the through openings.

19. The method of claim 16 further comprising forming fiber supports for a portion of the optical fibers not held in the ferrule.

20. The ferrule of claim 1 further comprising a molded support to hold a portion of optical fibers extending from the ferrule.